

Section 6-2: Parallelograms

By the end of this lesson, you should be able to answer:

- How do you recognize and apply properties of the sides and angles of parallelograms?
- How do you recognize and apply properties of the diagonals of parallelograms?

Define the following:

1. Parallelogram

Properties and Theorems of Parallelograms:

6.3 - Opposite Sides:

6.4 - Opposite Angles:

6.5 - Consecutive Angles:

6.6 - Right Angles:

6.7 - Bisecting Diagonals:

6.8 - Triangles from Diagonals:

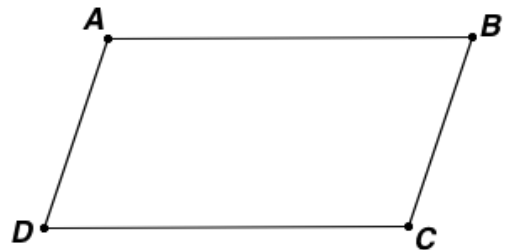
Example 1: In $\square ABCD$, suppose $m\angle B = 32^\circ$, $CD = 80$ inches, and $BC = 15$ inches.

Find each measure.

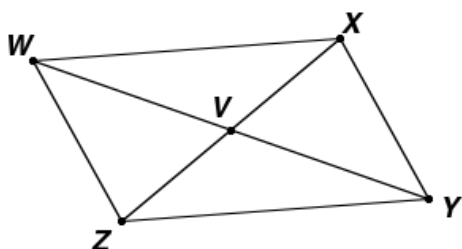
a. AD

b. $m\angle C$

c. $m\angle D$



Example 2: If $WXYZ$ is a parallelogram, find the value of the indicated variable.



$$m\angle VWX = (2t)^\circ, m\angle VYX = 40^\circ, m\angle VYZ = 18^\circ,$$

$$WX = 4r, ZV = 8s, VX = 7s + 3, ZY = 18$$

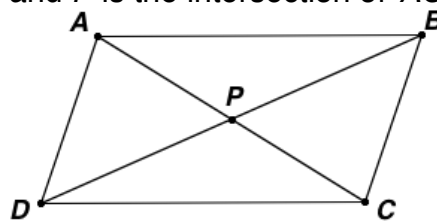
a. r

b. s

c. t

Example 3: What are the coordinates of the intersection of the diagonals of parallelogram $MNPR$ with vertices $M(-3, 0)$, $N(-1, 3)$, $P(5, 4)$, and $R(3, 1)$?

Example 4: Given $\square ABCD$, \overline{AC} and \overline{BD} are diagonals, and P is the intersection of \overline{AC} and \overline{BD} , prove that \overline{AC} and \overline{BD} bisect each other.



Problem Set:

"The best way to predict the future is to invent it." – Alan Kay